

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 April 2004 (08.04.2004)

PCT

(10) International Publication Number
WO 2004/029990 A2

(51) International Patent Classification⁷: **G21F 9/00**

(21) International Application Number:
PCT/GB2003/004168

(22) International Filing Date:
26 September 2003 (26.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0222342.8 26 September 2002 (26.09.2002) GB

(71) Applicant (for all designated States except US): **BNFL (IP) LIMITED** [GB/GB]; Risley, Warrington, Cheshire, WA3 6AS (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BROWN, Stephen, Christopher, Neil** [GB/GB]; British Nuclear Fuels plc, Research & Technology, Rutherford House, Risley, Warrington WA3 6AS (GB). **SPENCER, Julian, Timothy** [GB/GB]; British Nuclear Fuels plc, Research & Technology, Rutherford House, Risley, Warrington WA3 6AS (GB). **BENJAMIN, Andrew, William** [GB/GB]; British Nuclear Fuels plc, Research & Technology, Rutherford

House, Risley, Warrington WA3 6AS (GB). **THOMAS, Tristan, Goronwy** [GB/GB]; British Nuclear Fuels plc, Research & Technology, Rutherford House, Risley, Warrington WA3 6AS (GB).

(74) Agents: **BARKER, Rosemary, Anne et al.**; Harrison Goddard Foote, Orlando House, 11c Compstall Road, Marple Bridge, Stockport SK6 5HH (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

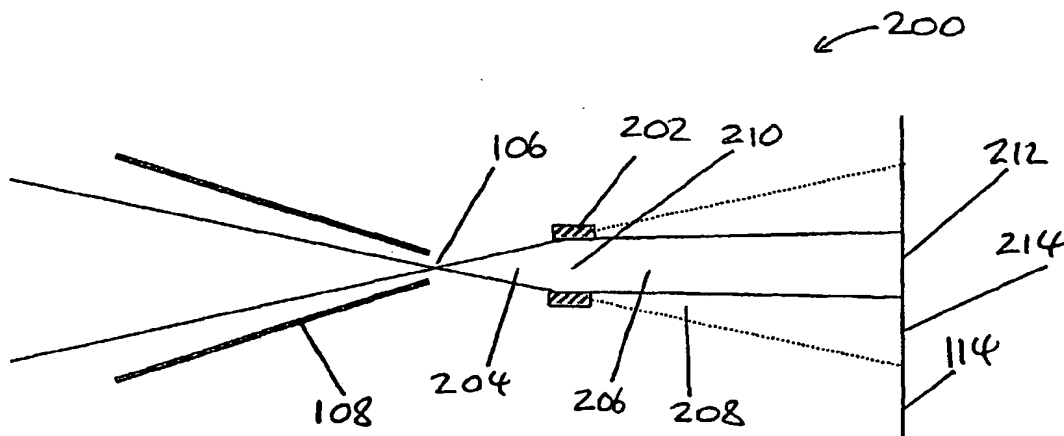
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: SURFACE TREATMENT OF CONCRETE



(57) Abstract: The invention provides a method and an apparatus for treating a surface for the removal of a surface portion thereof, comprising the steps of producing a beam of laser light and obscuring a low power density part of the laser beam before irradiating a surface location with the laser light so as to remove the surface portion. The apparatus for treating a surface for the removal of a surface portion thereof, comprises a laser source for producing a laser beam for irradiating a surface location with laser light so as to remove the surface portion wherein a low power density part of the laser beam is obscured and does not impinge upon the surface. The obscuration may be effected by a shadow mask and/or a reflective mask.